12/9/7
DIALOG(R)File   2:INSPEC
05762265   INSPEC Abstract Number: A9420-6160-033
    Title: Synthesis,   structure,   and   reactivity   of   novel   lanthanum
tungstates
    Author(s): Gartner, M.; Abeln, D.; Pring, A.; Wilde, M.; Reller, A.
    Author Affiliation: Inst. for Inorg. and Appl. Chem., Hamburg Univ.,
Germany
    Abstract: Two new compounds, $La_2W_3O_{12}$ and
$LaFeW_3O_{12}$, were prepared from $La_2W_3O_3$
and WO_3 or from Fe_2O_3, La_2O_3, and WO_3.
$La_2W_3O_{12}$ has a structure which can be considered as
a distorted superstructure of the scheelite structure $CaWO_4$ in which
1/3 of the Ca sites are vacant. It is monoclinic, with space group C2/c and
a=7.873(2) AA, and beta =109.25(3) degrees . $LaFeW_3O_{12}$ is
triclinic with a=7.569(3) AA, b=7.537(2) AA, alpha =90.13(4) degrees , and
y=98.90(3) degrees , and the structure consists of two distinct layers, one
of which is a La **tungstate** which consists of a sheet of La in eight
coordination and a sheet of edge-sharing FeO_6 octahedra sandwiched
between two sheets of edge-connected WO_6 octahedra. The reactivity of
these compounds with H_2 was investigated by TGA. La_2 ***W*** $_3O_{12}$
is reduced at 1100 degrees C to yield a mixture of La_2O_3 and ***W***   metal. The products of the reduction of $LaFeW_3O_{12}$ were found to depend on the composition of the atmosphere. In
N_2 with 5% H_2 the compound yields a complex mixture of $La_x(WO_3)_y$ compounds with **W** and a W-Fe alloy, while
in 100% H_2, La_2O_3, **W**, and the alloys Fe_6
W $_7$ or Fe_2 ***W*** are formed. (15 Refs)
    Identifiers: $La_2W_3O_{12}$; $LaFeW_3O_{12}$;
distorted superstructure; scheelite structure; monoclinic; space group;
edge-sharing FeO_6 octahedra; reactivity; TGA; reduction
    Chemical Indexing:
    La2W3O12 ss - La2 ss - O12 ss - La ss - W3 ss - O ss - **W** ss
(Elements -   3)
    LaFeW3O12 ss - O12 ss - **Fe ss** - **La ss** - W3 ss - **O ss** -
W ss (Elements -   **4**)

24aug06 14:39:18 User259284 Session D3752.2

File   2:INSPEC 1898-2006/Aug W2
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Set	Items	Description
S1	1	CI=(W SS(S)O SS(S)FE SS(S)PR SS)(S)NE=5
S2	5	CI=(W SS(S)O SS(S)FE SS(S)LA SS)(S)NE=5
S3	5	S1:S2
S4	579	CI=(O SS(S)FE SS(S)LA SS)(S)NE=4
S5	61	CI=(O SS(S)FE SS(S)PR SS)(S)NE=4
S6	622	S4:S5
S7	9	S6 AND TUNGST??????
S8	0	S6 AND CI=W DOP
S9	9	S6 AND CI=W
S10	13	S6 AND W
S11	16	S7:S10 NOT S3
S12	9	S11 NOT S11/2003-2006

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        FILE 'HCAPLUS' ENTERED AT 15:08:09 ON 24 AUG 2006
                 E US20050229676/PN
                 E 2003WO-US25481/PRN,AP
                 E MOSELEY P/AU,IN
L1          113 SEA ABB=ON   PLU=ON   "MOSELEY P"/AU OR ("MOSELEY P T"/AU OR
                 "MOSELEY P T"/IN)
L2           60 SEA ABB=ON   PLU=ON   ("MOSELEY PAT"/AU OR "MOSELEY PAT T"/AU OR
                 "MOSELEY PATRICK"/AU OR "MOSELEY PATRICK T"/AU OR "MOSELEY
                 PATRICK T"/IN OR "MOSELEY PATRICK TIMOTHY"/AU OR "MOSELEY
                 PATRICK TIMOTHY"/IN OR "MOSELEY PATRICT T"/AU)
L3          171 SEA ABB=ON   PLU=ON   (L1 OR L2)
                 E ATMOSPHERIC SENSORS/PA,CS
L4        36987 SEA ABB=ON   PLU=ON   PEROVSKIT?
L5            2 SEA ABB=ON   PLU=ON   L3 AND L4
L6              SEL PLU=ON   L5 1- RN :         6 TERMS
L7       612930 SEA ABB=ON   PLU=ON   L6
L8            1 SEA ABB=ON   PLU=ON   L5 AND L7
                 D ALL HITSTR TOT

        FILE 'STNGUIDE' ENTERED AT 15:10:45 ON 24 AUG 2006

        FILE 'HCAPLUS' ENTERED AT 15:11:30 ON 24 AUG 2006
L9            1 SEA ABB=ON   PLU=ON   L5 NOT L8
                 D ALL

        FILE 'STNGUIDE' ENTERED AT 15:11:37 ON 24 AUG 2006

        FILE 'REGISTRY' ENTERED AT 15:13:05 ON 24 AUG 2006
L10       77632 SEA ABB=ON   PLU=ON   W/ELS,MAC AND O/ELS,MAC
L11        4990 SEA ABB=ON   PLU=ON   L10 AND FE/ELS,MAC
L12        1376 SEA ABB=ON   PLU=ON   L10 AND LA/ELS,MAC
L13         349 SEA ABB=ON   PLU=ON   L10 AND PR/ELS,MAC
L14         228 SEA ABB=ON   PLU=ON   W/MF OR TUNGSTEN/CN
L15        5463 SEA ABB=ON   PLU=ON   FE/ELS,MAC AND O/ELS,MAC AND (LA/ELS,MAC
                 OR PR/ELS,MAC)
L16        4621 SEA ABB=ON   PLU=ON   FE/ELS,MAC AND O/ELS,MAC AND LA/ELS,MAC
L17         889 SEA ABB=ON   PLU=ON   FE/ELS,MAC AND O/ELS,MAC AND PR/ELS,MAC

        FILE 'HCAPLUS' ENTERED AT 15:16:10 ON 24 AUG 2006
L18         815 SEA ABB=ON   PLU=ON   L16(L)PEROVSKIT?

        FILE 'HCAPLUS' ENTERED AT 15:16:20 ON 24 AUG 2006
L19          52 SEA ABB=ON   PLU=ON   L17(L)PEROVSKIT?
L20         330 SEA ABB=ON   PLU=ON   L10(L)PEROVSKIT?
L21          97 SEA ABB=ON   PLU=ON   L11(L)PEROVSKIT?
L22          38 SEA ABB=ON   PLU=ON   L12(L)PEROVSKIT?
L23           1 SEA ABB=ON   PLU=ON   L13(L)PEROVSKIT?
L24           5 SEA ABB=ON   PLU=ON   L21 AND L22
L25         827 SEA ABB=ON   PLU=ON   L18 OR L19
L26          14 SEA ABB=ON   PLU=ON   L25 AND L10
L27           7 SEA ABB=ON   PLU=ON   L25 AND L11
L28          14 SEA ABB=ON   PLU=ON   (L18 OR L19) AND L10
L29           3 SEA ABB=ON   PLU=ON   (L18 OR L19) AND L14
L30          12 SEA' ABB=ON   PLU=ON   (L18 OR L19) AND TUNGSTEN
L31          12 SEA ABB=ON   PLU=ON   (L18 OR L19) AND TUNGST######
L32          16 SEA ABB=ON   PLU=ON   (L18 OR L19) AND W
L33           0 SEA ABB=ON   PLU=ON   (L18 OR L19) AND W0
L34           0 SEA ABB=ON   PLU=ON   (L18 OR L19) AND W1
L35           0 SEA ABB=ON   PLU=ON   (L18 OR L19) AND WX
L36           0 SEA ABB=ON   PLU=ON   (L18 OR L19) AND WY
L37           2 SEA ABB=ON   PLU=ON   (L18 OR L19) AND WO3
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L38        0 SEA ABB=ON   PLU=ON   (L18 OR L19) AND 1WO3
L39        0 SEA ABB=ON   PLU=ON   (L18 OR L19) AND 0WO3
L40        0 SEA ABB=ON   PLU=ON   (L18 OR L19) AND XWO3
L41        0 SEA ABB=ON   PLU=ON   (L18 OR L19) AND YWO3
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FILE 'STNGUIDE' ENTERED AT 15:21:45 ON 24 AUG 2006

FILE 'REGISTRY' ENTERED AT 15:22:27 ON 24 AUG 2006
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L42       75 SEA ABB=ON   PLU=ON   L11 AND L12
L43       12 SEA ABB=ON   PLU=ON   L11 AND L13
L44       87 SEA ABB=ON   PLU=ON   (L42 OR L43)
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FILE 'HCAPLUS' ENTERED AT 15:26:50 ON 24 AUG 2006
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L53       13 SEA ABB=ON   PLU=ON   L44 AND (?STOICHIOMET? OR RATIO OR
                                   PROPORTION? OR FRACTION OR PERCENT? OR PER OR CENT OR WT OR
                                   WEIGHT)
L54       28 SEA ABB=ON   PLU=ON   L44 AND 5
L55        9 SEA ABB=ON   PLU=ON   L44 AND 05
L56        0 SEA ABB=ON   PLU=ON   L44 AND 95
L57        0 SEA ABB=ON   PLU=ON   L44 AND W0
L58        0 SEA ABB=ON   PLU=ON   L44 AND W1
L59        0 SEA ABB=ON   PLU=ON   L44 AND 95W
L60       33 SEA ABB=ON   PLU=ON   (L53 OR L54)
L61        5 SEA ABB=ON   PLU=ON   L44 AND PEROVSK?

L62        9 SEA ABB=ON   PLU=ON   L44 AND TUNGSTAT?
L63       40 SEA ABB=ON   PLU=ON   (L60 OR L61 OR L62)
                     D BIB AB IT HITSTR TOT
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FILE 'STNGUIDE' ENTERED AT 15:30:28 ON 24 AUG 2006

FILE 'HCAPLUS' ENTERED AT 15:33:26 ON 24 AUG 2006
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L64        0 SEA ABB=ON   PLU=ON   (L17 OR L17)(L)PEROVSKIT? AND (L10 OR
                     L14(L)MOA/RL)
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FILE 'HCAPLUS' ENTERED AT 15:34:03 ON 24 AUG 2006
```
L65        3 SEA ABB=ON   PLU=ON   (L17 OR L17) AND PEROVSKIT? AND (L10 OR
                     L14(L)MOA/RL)
                     D ALL HITSTR TOT
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FILE 'STNGUIDE' ENTERED AT 15:34:35 ON 24 AUG 2006

FILE 'WPIX' ENTERED AT 15:35:49 ON 24 AUG 2006

FILE 'WPIX' ENTERED AT 15:35:54 ON 24 AUG 2006
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                     E 20050229676/PN
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FILE 'WPIX' ENTERED AT 15:36:02 ON 24 AUG 2006
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                     E US20050229676/PN
L66        1 SEA ABB=ON   PLU=ON   US2005229676/PN
                     D MAX
L67          SEL PLU=ON   L66 1- PN :       4 TERMS
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FILE 'HCAPLUS' ENTERED AT 15:36:49 ON 24 AUG 2006
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L68   612930 SEA ABB=ON   PLU=ON   L6
L69        0 SEA ABB=ON   PLU=ON   L67
                     E US 2002-402948P/PRN,AP
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